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M U D P I E no. 20

Museum and University Data, Program and Information Exchange

AVAILABLE MATERIALS

During the past few years several reprints, papers, programs, and similar materials have been either sent to or made available upon request to MUDPIE readers. There has been a steady growth in the list of recipients of MUDPIE, however, and many who might be interested in the materials have not received them. The following list shows what we still have, and we will send them out as long as the supply lasts. Please send your requests to the Secretary, Division of Amphibians and Reptiles, National Museum of Natural History, Washington DC 20560.

Bull, C. A. & R. Shank. Non-Conventional File Structure Data-Collecting in the Smithsonian Institution: A Survey. Smithsonian Library, Dec., 1970: misc. pagination.

Council on Biological Sciences Information. Information Handling in the Life Sciences. Division of Biology and Agriculture, National Research Council, Feb., 1970: 79 pp.

Morse, L. E., J. A. Peters, & P. B. Hamel. A general data format for summarizing taxonomic information. BioScience, vol 21, 1971: 174-180, 186.

Morse, L. E. Specimen identification and key construction with time-sharing computers. Taxon, vol. 20, 1971: 269-282.

Peters, J. A. & B. B. Collette. The role of time-share computing in museum research. Curator, vol. 11: 65-75.

Peters, J. A. Computer techniques in systematics--discussion. IN: Systematic Biology; Nat Acad Sci, Washington, 1969: 610-613.

Peters, J. A. Biostatistical programs in BASIC language for time-shared computers: Coordinated with the book "Quantitative Zoology." Smithsonian Contributions to Zoology, no. 69, 1971: 1-46.

Waller, T. R. Two FORTRAN II programs for the univariate and bivariate analysis of morphometric data. USNatMus Bulletin 285, 1968: 1-55.

SMITHSONIAN
SEP 27 1971
LIBRARIES

MULTIVARIATE ANALYSIS

The Fisheries Research Board of Canada issues a series of technical reports at irregular intervals, which they indicate are "research documents of sufficient importance to be preserved, but which for some reason are not appropriate for scientific publication." Since they anticipate some of the material will eventually appear in scientific papers, they suggest care be taken to indicate the manuscript status if cited elsewhere. They have just issued Technical Report no. 244, which is entitled "Multivariate Analysis for the Fisheries Biology," written by P. J. Lee (1971, vi + 182 pp.). The chapter headings are: Matrix Algebra; Concepts of Mathematical Statistics; Multiple Regression and Correlation; Principal Components; Canonical Correlation and Canonical Trend Surfaces; Discriminant Functions; and Factor Analysis. This is followed by listings of programs in FORTRAN IV, including the following:

CANONICAL CORRELATION PROGRAM
CANONICAL TREND SURFACE PROGRAM
PRINCIPAL COMPONENT ANALYSIS PROGRAM
DISCRIMINATORY ANALYSIS PROGRAM
SUBROUTINES (needed for running above)

According to the title page, inquiries about the report should be sent to the following: Fisheries Research Board of Canada, Freshwater Institute, Winnipeg, Manitoba. Presumably it is available for distribution from them.--JAP.

STATISTICAL ECOLOGY

An advanced institute on statistical ecology is scheduled at Penn State University June 19 to July 29, 1972. It is sponsored by the International Association of Ecology and the International Statistical Institute. It will include work on modeling and simulation of biological populations, chance mechanisms and statistical distribution in ecology, measurement and detection of spatial patterns, sampling biological populations, multivariate methods in ecology, and quantitative population dynamics and systems analysis in ecology. Included will be individual study, work on independent problems, participant seminars, small group discussions and workshops. The course is aimed at graduate faculty, post-doctorals, advanced graduate students, and research scientists involved in statistical ecology. Requirements include: 1 year of calculus, 1 yr of probability and statistics, one year of biology and ecology, 1 course in linear algebra, and 1 course in computer programming. Participants are supported by NSF. Applications go to G. P. Patil, Director, Advanced Institute on Statistical Ecology, 330 McAllister Bldg, University Park PA 16802.

MATHEMATICAL GEOLOGY, 1962-1970

Geosystems (P.O. Box 1024, Calgary 2, Alberta Canada) has devoted issue no. 3/11 of the "Geocom Bulletin" to a complete listing of all papers presented at conferences either devoted to mathematical geology or including papers on the subject, and it makes an impressive listing. From the introduction: "This issue contains a partial listing of papers that have been presented at conferences, symposia, meetings, courses and seminars since 1962, and are of interest in mathematical geology. Conferences are listed in date order." There is an author index, but no subject index.--JAP.

AVAILABLE PROGRAMS

GRADOR--Takes scores which a class has made on an examination and computes the following statistics on them: mean, mean %, standard deviation, standard error, coefficient of variance, median, skewness, kurtosis, number of scores, highest possible grade, highest grade made, lowest possible grade, lowest made, range, standard deviation of range, range %. The program also ranks the scores, lists them in descending order, gives the percentage of a perfect score for each rank, the frequency of each score, and finally produces a graph of the score versus frequency. Written in BASIC by Werner Heim, Dept. of Biology, Colorado College, Colorado Springs CO 80903, for use on Hewlett-Packard 2000C. Can be run on any BASIC compiler. Available from author.

SURVEY OF COMPUTER PROGRAM CATALOGS-II

WOODS HOLE OCEANOGRAPHIC INSTITUTION

A compilation of the computer programs in use at Woods Hole is available for limited distribution only. The Institution formerly sponsored "COPE"--"Cooperative Oceanographic Programming Effort," but this no longer exists, and they no longer maintain a continuing exchange. The Institution does have a series of programs available for in-house use, however, and will make copies of the pertinent section in their "Computer Users Handbook" available to others who might wish to take advantage of their tested programs. The list includes about 90 programs, grouped under the following headers: Input-Output; Conversion; Oceanographic; Statistical; Mathematical; Utility; Housekeeping; and Graphic Display. The listing is available from Jacqueline Webster, Information Processing Center, Woods Hole Oceanographic Institution, Woods Hole MA 02543.--James A. Peters.

RECENT LITERATURE

Apter, M. J. The computer simulation of behavior. Hutchinson Univ. Library, London, 1970: 1-180.

Bartels, P. H., G. F. Bahr, J. C. Bellamy, M. Bibbo, D. L. Richards, & G. L. Wied. A self-learning computer program for cell recognition. Acta Cytologica, vol. 14, 1970: 486-494.

Benz, C. W. PASSION--Program for Algebraic Sequences Specifically of Input-Output Nature. W. H. Freeman, 1971: pp. viii + 92. (A system designed for economic data matrix manipulation, and primarily set up for IBM card input. Programs in Fortran IV are included.)

Crovello, T. J. The fourth annual numerical taxonomy conference. Systematic Zoology, vol. 20, 1971: 233-238.

Daniel, C. & F. S. Wood. Fitting Equations to Data. Wiley-Interscience, New York, 1971: xv + 342.

Furlow, J. J., & J. H. Beaman. Sample taxonomic data matrices for vascular plants prepared by students at Michigan State University. Flora North America Report 56, 1971: 1-118.

Hall, A. V. A computer-based method for showing continua and communities in ecology. Journal of Ecology, vol. 58, 1970: 591-602.

Jackson, R. C. & T. J. Crovello. A comparison of numerical and biosystematic studies in Haplopappus. Brittonia, vol. 23, 1971: 54-70.

Johnson, L. R. System structure in data, programs, and computers. Prentice-Hall, 1970: xiii + 303.

Morse, L. E. Specimen identification and key construction with time-sharing computers. Taxon, vol. 20, 1971: 269-282.

Morse, L. E., J. J. Furlow, & J. H. Beaman. Computers in Systematic Biology. Flora North America Report 62, 1971: 1-58. (This report summarizes the work done and results obtained during a two year experimental course under the above title at Michigan State--see MUDPIE no. 9 for an early summary.)

Peckham, H. D. Computers, BASIC, and Physics. Addison-Wesley, Reading, MA, 1971: 1-320. (Presents a brief introduction to BASIC, and then develops the various ways the language can be used in physics. These ways are in many cases easily adaptable to biology. In most cases programs are printed in the text, and demonstrate the power of BASIC to handle all kinds of physical problems.--JAP)

RECENT LITERATURE

Sackman, H. Mass Information Utilities and Social Excellence. Auerbach, Princeton, 1971: ix + 284.

Schneider, J. H. Selective dissemination and indexing of scientific information. Science, vol. 173, 1971: 300-308.

Sneath, P. H. A. Numerical taxonomy: criticisms and critiques. Biological Journal of the Linnean Society, vol. 3, 1971: 147-157.

Squires, D. F. An information storage and retrieval system for biological and geological data. Curator, vol. 13, 1970: 43-62.

Yankelevich N., G., & J. Negrete-M. El uso del contenido de informacion de las caracteristicas en la identificacion taxonomica automatizada. Bol. Estud. Med. Biol. Mex., vol. 26, 1969: 73-79.

YOU SAW IT FIRST IN MUDPIE!

The first announcement of the 17th International Congress of Zoology, to be held in Monaco, 24-30 September, 1972, has just been received. This is the final Congress, and is being organized primarily to terminate outstanding business and obligations of the Congress. There will be eight symposia offered, four of which are already announced, four more of which will be announced "as soon as the proposed chairmen have declared their willingness to organise them." Announced symposia include: Biogeography and Intercontinental Connections during the Mesozoic; Cladistic Methods in Transpecific Evolution; The Biological Effects of Interoceanic Canals; and The Future of Zoological Nomenclature. The number of participants is to be limited to 1000, without "establishing any quotas." Further information can be obtained from the:

Comite d'organisation
XVIIe Congres International de Zoologie
Musee oceanographique
Monaco, Principaute de Monaco

September, 1971
Division of Reptiles and Amphibians
National Museum of Natural History
Washington, DC 20560